Ch:3

DSS ?

↳systems designed to support managerial decision-making in unstructured Problems.

↳support solutions or evaluate opportunities.

↳methodology that supports decision-making.

DSS is

flexible, Adaptive, interactive, Employs modeling, GUI-based.

Components of DSS

*subsystems.

a) Data management (managed by DBMS)

b) Model management (managed by MBMS)

c) user interface

d) Knowledge management and organizational Knowledge base.

a) Data management subsystem

*Components

Database, Query facility, Database management system, Data dictionary.

1. Database:
   - ↳ interrelated data extracted from various sources, stored for use by the organization, and queried.
   - ↳ Private data or gaidelines used by decision-makers.
     - ↳ internal data, from TPS.
     - ↳ external data from government agencies, market search firms.

2. Database management system:
   - ↳ extracts data.
   - ↳ manage data and their relationships.
   - ↳ updates (add, delete, change)
   - ↳ Retrieves data
   - ↳ employs data dictionary.
   - ↳ manipulates data.

c- Data dictionary

↳ Catalog of all data
- ↳ Contains data definitions.
- ↳ Answer questions about availability of data items such as (meaning of data, source of data)
- ↳ Allows for additions...

Model management system

Components

Model base, Modeling language, Model directory, Model base management system (MBMS), Model execution.

Models

* strategic
  ↳ Supports top management decisions.

* Tactical
  ↳ used primarily by middle management to control and allocate resources

* Operational
  ↳ supports daily work activities.

* Analytical
  ↳ used to perform analysis of data.

Model base management system

*Functions

a) model creation.
b) model data manipulation.
c) b) model updates.
d) Generation of new routines.

Model directory

a) Catalog of models.
b) Contain model definition and its function.

Model Execution

↳ controls running of model.

⇒ Model Command Processor

↳ receives model instructions from user interface.
↳ Routes instructions to MBMS.

⇒ Model integration

↳ Combines several models' operations.

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user interface management Subsystems (UIMs)

* GUI
* natural language Processor.
* interacts with model management and data management subsystems.

* Examples

* Speech recognition.
* Display Pannel.

UIMS Capabilities

a) Provides graphical user interface.
b) Accommodates the user with variety of i/p devices.
c) Presents data with a varity of formats and o/p ".
d) Provides interactions with database and model base.
e) stores i/p and o/p data.
f) Provides color graphics, 3-d graphics.

Knowledge-Based management system

→ unstructured & semi structured Problems need expertise ~~an expertise~~
→ this can be provided by expert system.
→ Knowledge-based management system ~~are~~ is Component Can supply required expertise for solving aspects of Problem and enhance operation of DSS.

DSS Hardware

→ De Facto standard hardware.
→ web server with DBMs:
a) Operates using browser
b) Data stored in variety of databases.
c) Access for mobile devices.

Dss classifications

1) Alter

* the extent to which outputs can directly support or determine the decision.
* Data oriented or model oriented.

2) Holsapple and Whinston

* (Text, database, spreadsheet, solver, rule) oriented or Compound.

a) Text-oriented Dss

→ information stored in text format, accessed by decision makers.

→ It supports decision-maker by electronically keep track of text which contain information.

→ Web-based document, hypertext be incorporated into text-oriented.

b) Database-oriented Dss

→ Database plays major role in Dss structure.

→ It features strong report generation and query capabilities.

c) Spread sheet - oriented DSS

↳ It is modeling system allows user to develop model to execute DSS analysis.

→ Microsoft - Excel is most popular tool for developing DSS, it has models like (linear programming model "solver")

→ some spreadsheet tools include what-if analysis or goal-seeking capabilities.

→ It is a special case of solver-oriented DSS.

d) Solver - oriented DSS

→ algorithm written as computer program to make computations to solve particular problem.

→ It can be commercially programmed in development sw. for ex: (Excel has several solver functions)

→ Solver can be written in programming language such as C++.

other Dss Classifications

* Donovan and Madnick

→ **Institutional Dss** : supports Problems for recurring nature (repetitive)

→ **Ad hoc Dss** : supports Problems that are not repetitive.

* HacKathon and Keen

- Personal Dss.
- Group Dss.
- organizational Dss.

* Gss vs Individual Dss

↳ Decision made by by entire group or individual decision maker.

* Custom made vs vendor ready made

→ Many Dss are custom-made for individual user and organizations.

→ Generic Dss (ready made) may be modified for use:

- ↳ it reduces costs.
- ↳ Addresses repeatable industry Problems.

Web and Dss

→ web used for collecting external & internal data for Dss data base.

→ web can be use for communication between Dss builders, users and management.

→ web used to download Dss sw, use Dss apps.

→ standard Dss interface is now web browser.